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IN THE CLAIMS

Please amend the claims as follows. This listing of the claims will replace all prior versions, and listings, of the claims in the Application.

(currently amended) 1. A method of scheduling high-priority packets in a metro Ethernet switch, the method comprising the steps of:

determining a maximum per-hop queuing delay allowed for at least two high-priority packets in a queue in the switch, wherein the maximum per-hop queuing delay for a particular one of said high-priority packets is a respective maximum per-hop queuing delay calculated dependent upon a number of hops in a label switched path ("LSP") between the switch and a designated destination of the particular one of said high-priority packets and wherein said the respective maximum per-hop queuing delay is calculated only during set-up of the LSP and dependent upon a specified maximum end-to-end delay;

determining which one of the at least two high-priority packets has thea smallest node exit delay requirement, wherein a node exit delay requirement for a designated high-priority packet is the sum of the maximum per-hop queuing delay allowed for the designated high-priority packet and a time of entry at the switch for the designated high-priority packet; and

scheduling the one of the at least two high-priority packets determined to have the smallest node exit delay requirement before the remaining ones of the at least two high-priority packets.

(previously presented) 2. The method of claim 1 wherein the step of determining which one of the at least two high-priority packets has the smallest node exit delay requirement comprises the steps of:

creating a POS table that lists, for each high-priority packet that has entered the

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switch, a position of the high-priority packet in a queue of the switch, a time the high-priority packet entered the queue, and an intended destination of the high-priority packet;

creating a Qmax table for storing a maximum allowed per-hop queuing delay for each of several possible intended destinations; and

using the Qmax table and the POS table to determine a node exit delay requirement for each of the high-priority packets in the queue of the switch.

(previously presented) 3. The method of claim 2 wherein the step of creating a Qmax table comprises the steps of, for each label switched path ("LSP") between the switch and one of the possible intended destinations:

determining a number of hops along the LSP; and

dividing a maximum queuing delay allowed for the LSP by the number of hops along the LSP to determine the maximum allowed per-hop queuing delay.

(original) 4. The method of claim 2 wherein the step of creating a Qmax table is performed only once during LSP setup.

(original) 5. The method of claim 2 further comprising the step of updating the POS table each time a new high-priority packet enters the queue.

(previously presented) 6. The method of claim 1 wherein the steps of determining a maximum per-hop queuing delay allowed, determining which one of the at least two high-priority packets has the smallest node exit delay requirement, and scheduling the one of the at least two high-priority packets determined to have the smallest node exit delay requirement

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before the remaining ones of the at least two high-priority packets are performed each time a new high-priority packet enters the queue.

(original) 7. The method of claim 1 wherein the queue is capable of performing an n -packet look-ahead.

(currently amended) 8. A method of scheduling high-priority packets in a metro Ethernet switch, the method comprising the steps of:

creating a first table that lists, for each high-priority packet that has entered the switch, a position of the high-priority packet in a queue of the switch, a time the high-priority packet entered the queue, and an intended destination of the high-priority packet;

creating a second table for storing a maximum allowed per-hop queuing delay for each of several possible intended destinations, wherein the maximum per-hop queuing delay for a particular one of said intended destinations is a respective maximum per-hop queuing delay calculated dependent upon a number of hops in a label switched path ("LSP") between the switch and the particular one of said intended destination and wherein the respective maximum per-hop queuing delay is calculated only during set-up of the LSP and dependent upon a specified maximum end-to-end delay; and

using the first and second tables to determine a node exit delay requirement for each of the high-priority packets in the queue of the switch, wherein a node exit delay requirement for a designated high-priority packet is the sum of the maximum allowed per-hop queuing delay for the designated high-priority packet and a time of entry at the switch for the designated high-priority packet.

(currently amended) 9. The method of claim 8 further comprising the step of:

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determining a maximum per-hop queuing delay allowed for at least two high-priority packets in a queue in the switch, wherein the maximum per-hop queuing delay for a particular one of said high-priority packets is a respective maximum per-hop queuing delay calculated dependent upon a number of hops in a label switched path ("LSP") between the switch and a designated destination of the particular one of said high-priority packets.

(previously presented) 10. The method of claim 9 further comprising the step of:
determining which one of the at least two high-priority packets has thea smallest node exit delay requirement.

(previously presented) 11. The method of claim 10 further comprising the step of:
scheduling the one of the at least two high-priority packets determined to have the smallest node exit delay requirement before the remaining ones of the at least two high-priority packets.

(canceled) 12.

(previously presented) 13. The method of claim 8 wherein the step of creating a second table comprises the steps of, for each label switched path ("LSP") between the switch and one of the possible intended destinations:

determining a number of hops along the LSP; and

dividing a maximum queuing delay allowed for the LSP by the number of hops along the LSP to determine the maximum allowed per-hop queuing delay.

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(original) 14. The method of claim 8 wherein the step of creating a second table is performed only once during LSP setup.

(original) 15. The method of claim 8 further comprising the step of updating the first table each time a new high-priority packet enters the queue.

(original) 16. The method of claim 8 wherein the queue is capable of performing an n -packet look-ahead.

(currently amended) 17. Apparatus for scheduling high-priority packets in a metro Ethernet switch, the apparatus comprising:

means for determining a maximum per-hop queuing delay allowed for at least two high-priority packets in a queue in the switch, wherein the maximum per-hop queuing delay for a particular one of said high-priority packets is a respective maximum per-hop queuing delay calculated dependent upon a number of hops in a label switched path ("LSP") between the switch and a designated destination of the particular one of said high-priority packets and wherein said the respective maximum per-hop queuing delay is calculated only during set-up of the LSP and dependent upon a specified maximum end-to-end delay;

means for determining which one of the at least two high-priority packets has the smallest node exit delay requirement, wherein a node exit delay requirement for a designated high-priority packet is the sum of the maximum per-hop queuing delay allowed for the designated high-priority packet and a time of entry at the switch for the designated high-priority packet; and

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means for scheduling the one of the at least two high-priority packets determined to have the smallest node exit delay requirement before the remaining ones of the at least two high-priority packets.

(previously presented) 18. The apparatus of claim 17 wherein the means for determining which one of the at least two high-priority packets has the smallest node exit delay requirement comprises:

a POS table that lists, for each high-priority packet that has entered the switch, a position of the high-priority packet in a queue of the switch, a time the high-priority packet entered the queue, and an intended destination of the high-priority packet;

means for creating a Qmax table for storing a maximum allowed per-hop queuing delay for each of several possible intended destinations; and

means for using the Qmax table and the POS table to determine a node exit delay requirement for each of the high-priority packets in the queue of the switch.

(previously presented) 19. The apparatus of claim 18 wherein the means for creating a Qmax table comprises, for each label switched path ("LSP"):

means for determining a number of hops along the LSP; and

means for dividing a maximum queuing delay allowed for the LSP by the number of hops along the LSP to determine the maximum allowed per-hop queuing delay.

(original) 20. The apparatus of claim 18 wherein the Qmax table is created during LSP setup.

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(original) 21. The apparatus of claim 18 further comprising means for updating the POS table each time a new high-priority packet enters the queue.

(original) 22. The apparatus of claim 17 wherein the queue is capable of performing an n -packet look-ahead.

(currently amended) 23. A packet switch comprising:

a queue containing a plurality of packets received at the switch; and

a scheduler for scheduling transmission of the packets in the queue, wherein when the queue contains at least two high-priority packets, the scheduler schedules the one of the at least two high-priority packets determined to have a smallest node exit delay requirement before the remaining ones of the at least two high-priority packets, wherein a node exit delay requirement for a designated high-priority packet is the sum of a maximum per-hop queuing delay allowed for the designated high-priority packet and a time of entry at the switch for the designated high-priority packet, wherein the maximum per-hop queuing delay for a particular one of said high-priority packets is a respective maximum per-hop queuing delay calculated dependent upon a number of hops in a label switched path ("LSP") between the switch and a designated destination of the particular one of said high-priority packets and wherein said the respective maximum per-hop queuing delay is calculated only during set-up of the LSP and dependent upon a specified maximum end-to-end delay.

(previously presented) 24. The packet switch of claim 23 further comprising a state machine for:

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